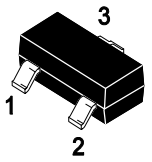
LBSS123ELT1G
S-LBSS123ELT1G

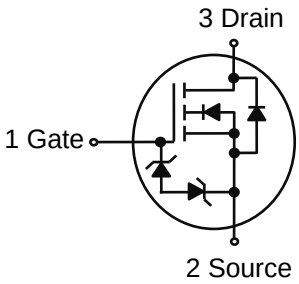
N-CHANNEL POWER MOSFET



SOT23(TO-236)

1. FEATURES

- Gate to Source ESD protected, HBM ≥ 2000V.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.



2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LBSS123ELT1G	SEA	3000/Tape&Reel
LBSS123ELT3G	SEA	10000/Tape&Reel

3. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	100	V
Gate–to–Source Voltage – Continuous	VGS	±20	V
Drain Current – Continuous (Note 1) – Pulsed (Note 2)	 ID IDM	 0.17 0.68	A

4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR−5 Board (Note 3) @ TA = 25ºC Derate above 25ºC	PD	225 1.8	mW mW/ºC
Thermal Resistance, Junction–to–Ambient	RΘJA	556	ºC/W
Junction and Storage temperature	TJ,Tstg	−55~+150	°C

1. The Power Dissipation of the package may result in a lower continuous drain current.
2. Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.
3. FR–5 = 1.0×0.75×0.062 in.

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–Source Breakdown Voltage (VGS = 0, ID = 250μA)	VBRDSS	100	-	-	V
Zero Gate Voltage Drain Current (VGS = 0, VDS = 80 V, Tj=25℃)	IDSS	-	-	1	μA
Gate–Body Leakage Current (VGS = ± 20 V, VDS = 0)	IGSS	-	-	± 10	μA

ON CHARACTERISTICS (Note 4)

Gate Threshold Voltage (VDS = VGS, ID = 250μA)	VGS(th)	1.5	2.0	2.5	V
Static Drain–Source On–State Resistance (VGS = 10 V, ID = 250 mA) (VGS = 4.5 V, ID = 200 mA)	RDS(on)	- -	- -	6 9	Ω

DYNAMIC CHARACTERISTICS

Input Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Ciss	-	42.7	-	pF
Output Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Coss	-	14	-	pF
Reverse Transfer Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Crss	-	3	-	pF
Total Gate Charge (VDS = 10 V, VGS = 10V, ID=0.22A)	Qg	-	6.32	-	nC
Gate-Source Charge (VDS = 10 V, VGS = 10V, ID=0.22A)	Qgs	-	1.55	-	nC
Gate-Drain Charge (VDS = 10 V, VGS = 10V, ID=0.22A)	Qgd	-	0.68	-	nC

SWITCHING CHARACTERISTICS (Note 4)

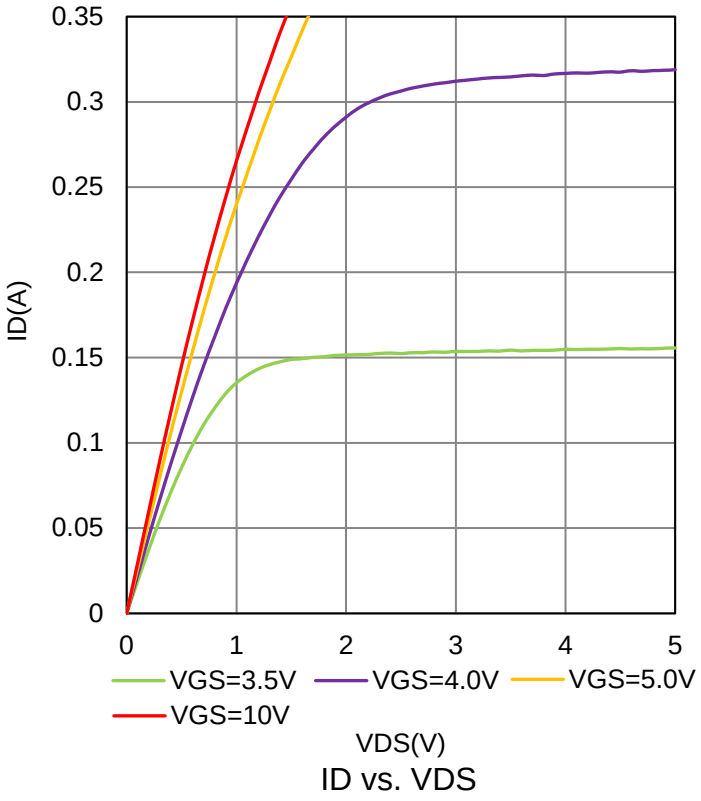
Turn-On Delay Time	(VCC = 30 V, IC = 0.28 A,VGS = 10 V, RGS = 50 Ω)	td(on)	-	20	-	ns
Turn-Off Delay Time		td(off)	-	40	-	

REVERSE DIODE

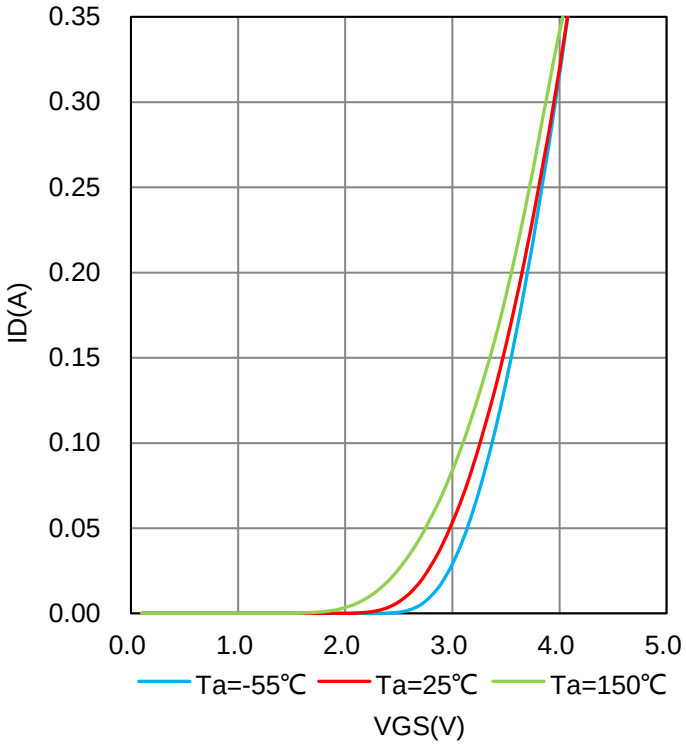
Diode Forward On–Voltage (ID = 0.4 A, VGS = 0 V)	VSD	-	-	1.3	V

4. Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

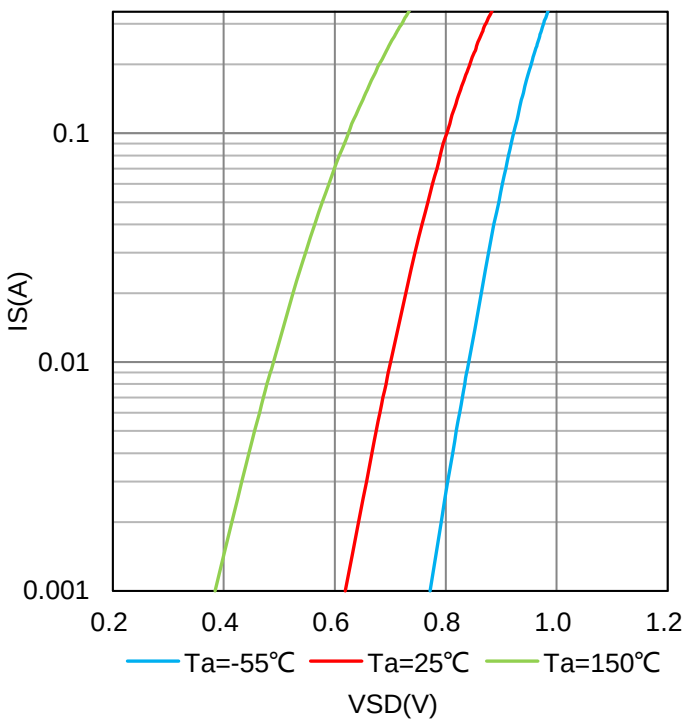
6.ELECTRICAL CHARACTERISTICS CURVES



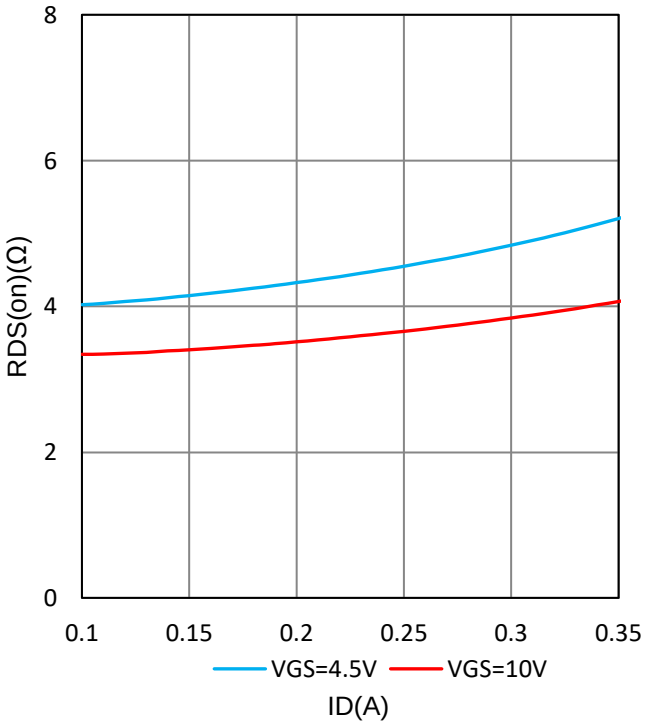
ID vs. VDS



ID vs. VGS

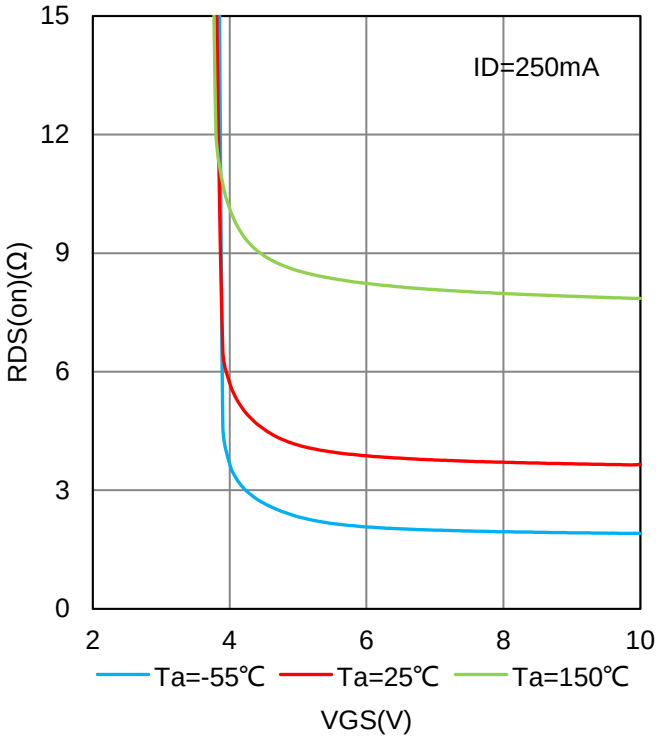


IS vs. VSD

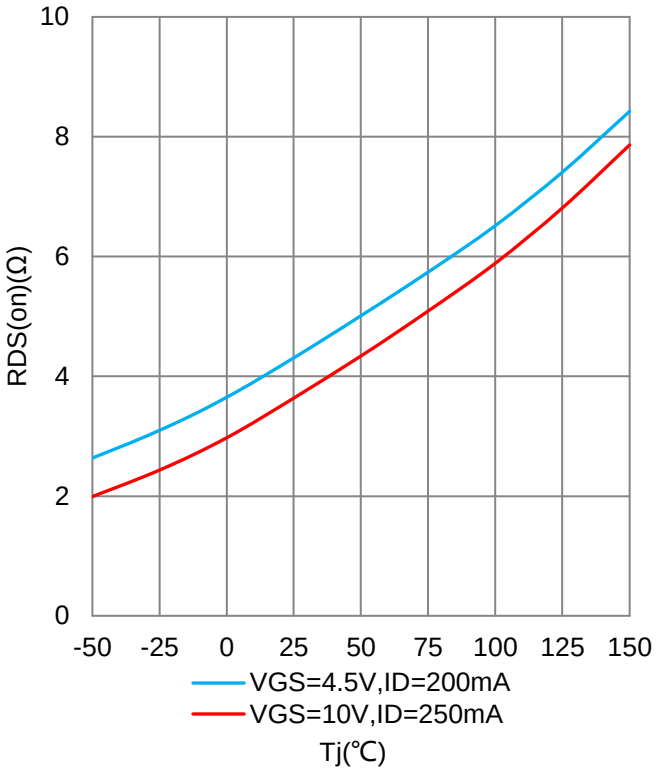


RDS(on) vs. ID

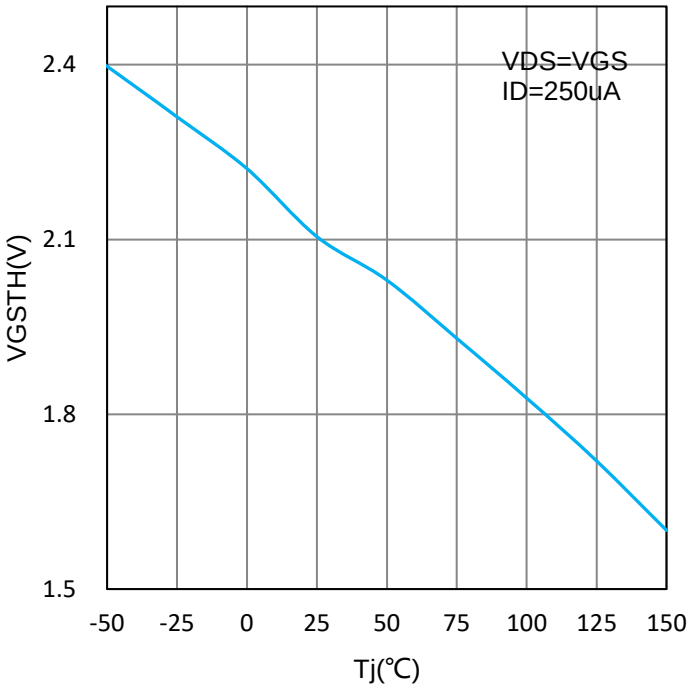
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



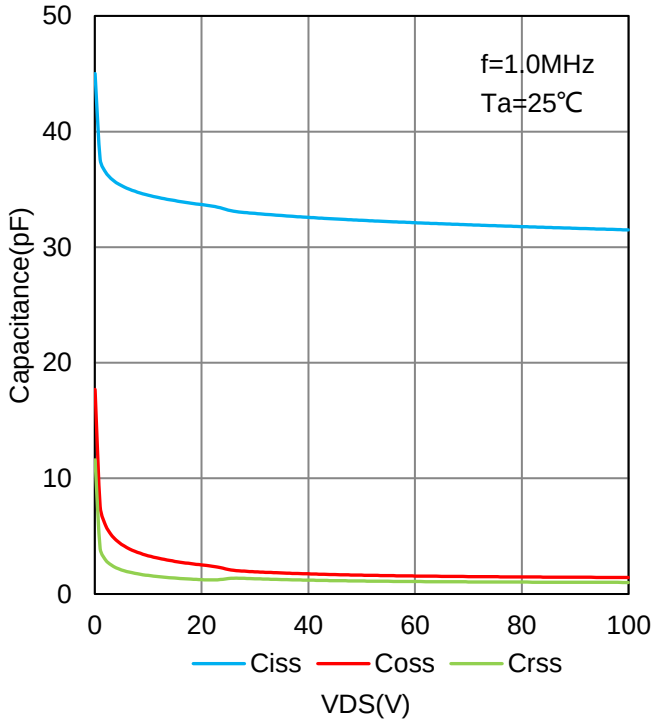
RDS(on) vs. VGS



RDS(on) vs. Tj

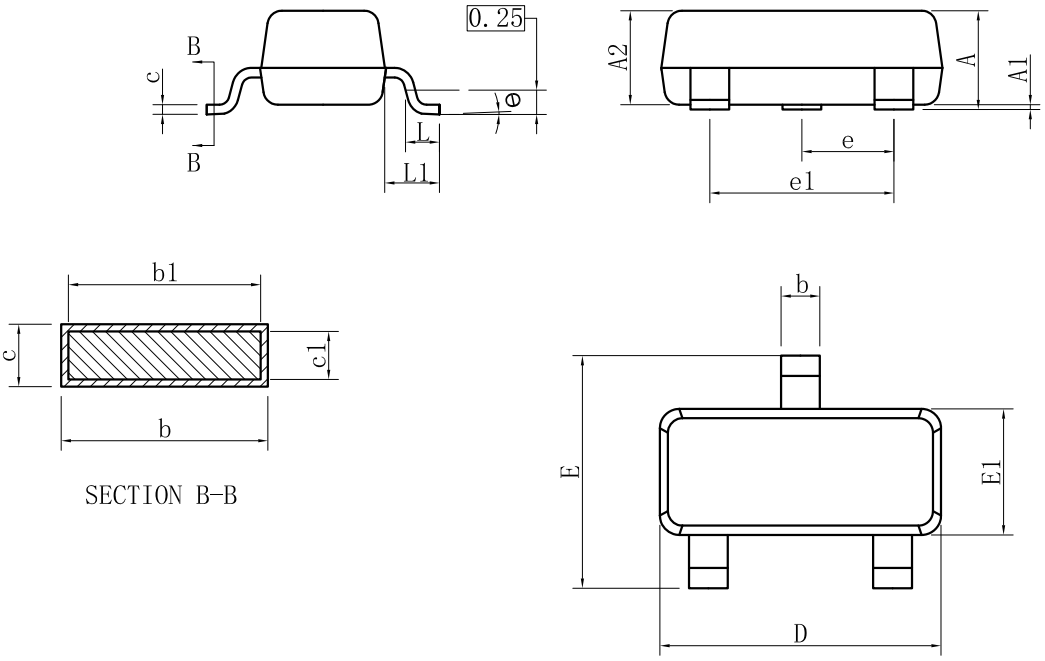


VGSTH vs. Tj



Capacitance

7.OUTLINE AND DIMENSIONS

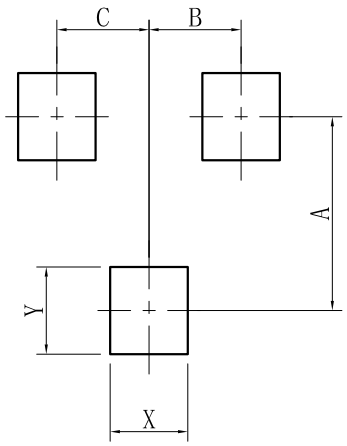


SOT23			
DIM	MIN	NOR	MAX
A	0.89	-	1.12
A1	0.01	-	0.10
A2	0.88	0.95	1.02
b	0.30	-	0.50
b1	0.30	0.40	0.45
c	0.08	-	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	-	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	-	8°
All Dimensions in mm			

GENERAL NOTES

1. Top package surface finish Ra0.4±0.2um
2. Bottom package surface finish Ra0.7±0.2um
3. Side package surface finish Ra0.4±0.2um

8.SOLDERING FOOTPRINT



SOT-23	
DIM	(mm)
X	0.80
Y	0.90
A	2.00
B	0.95
C	0.95

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.

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